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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,164	08/30/2005	Jerome Tauzin	LOM-43	5234

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EXAMINER	
YOUNG, HUGH PARKER	
ART UNIT	**PAPER NUMBER**
1654	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/19/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/519,164	TAUZIN ET AL.	
	Examiner	Art Unit	
	Hugh P. Young	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date: 11/14/06
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Requirement for Restriction Made Final

1. Applicant's election with traverse of Group XIX, claims 3-6 in the reply filed on August 30, 2006 is acknowledged. The traversal is on the ground(s) that the inventions of Groups I-XXI have a unique technical feature which is not shown by the other groups. This is not found persuasive because the unique technical feature shared by the groups, the peptide of sequence FALPQYLK, (SEQ ID NO: 5) is not a contribution over the art because it is anticipated by Matoba et al, 1970 (Agricultural and Biological Chemistry, 34: 1235-1243), who isolated the same octapeptide from casein by trypsin hydrolysis. Garault et al. 2002 (J. Biol. Chem. 277(1): 32-39) teach the instant peptides SEQ ID NO: 5 (FALPQYLK), SEQ ID NO: 8) ALNEINQFYQK, and SEQ ID NO: 9 (ALNEINQFY) as peptides obtained from hydrolysates of commercially available alpha-s2-casein in Table II, page 36, thus showing the peptides claimed as not being a contribution over the art.

Upon further consideration and in light of the fact that the elected species, SEQ ID NO: 5, FALPQYLK, reads on claims 1 and 2, the restriction as required in the Office action of August 22, 2006 is set aside and claims 1 and 2 are rejoined to claims 3 –6, Group XIX, comprising SEQ ID NO: 5 and 8-10.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 2-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Matoba et al, 1970 (*Agricultural and Biological Chemistry*, 34: 1235-1243). Matoba et al. teach an octapeptide, BP-III, of sequence FALPQYLK, isolated from a trypsin hydrolysate of casein. As recited in their Abstract and Table VI, page 1241, of the Results section, the sequence of peptide BP-III is Phe-Ala-Leu-Pro-Gln-Tyr-Leu-Lys, as determined by Edman degradation. Although Matoba et al. were assessing peptides and amino acids for flavor, particularly bitter taste, any properties of the octapeptide FALPQYLK are inherent to the peptide, as isolated and published by Matoba et al. As claimed in the instant application the peptide of sequence FALPQYLK is a component of a product claim which has an intended use. Any intended use notwithstanding, the peptide itself is anticipated by Matoba et al., 1970.

4. Claims 2-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Zucht, H.D., et al, 1995 (*FEBS Letters*, 372: 185-188), in which they teach the isolation and characterization of a peptide from casein-alpha-s2. The peptide, of 39 amino acids, comprises the sequence from position 165-203, was sequenced by Edman degradation and determined to have antibacterial characteristics. Any intended use notwithstanding,

the instant peptide, FALPQYLK, comprising residues 174-181 of casein, is contained within and encompassed by the peptide Casocidin-I, as isolated by Zucht et al., 1995.

5. Claims 2-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Brignon, G. et al, 1977 (*FEBS Letters* 76(2): 274-279), in which they teach the complete peptide sequence, as determined by Edman degradation, of casein-alpha-s2. The sequence FALPQYLK, amino acids 174-181, is taught in Figures 3 and 4, pages 277 and 278 respectively. Brignon et al. also teach (page 274, Introduction) that the peptide sequence of alpha-s2-casein is repeated in alpha-s3-, alpha-s4-, and alpha-s6-casein, with some additions or deletions of the attached phosphate groups. Any intended use notwithstanding, the instant peptide, FALPQYLK, comprising residues 174-181 of alpha-s2-casein, is taught by Brignon et al, 1977.

6. Claims 2-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Garault et al., 2002 (J. Biol. Chem. 277(1): 32-39), in which they teach the peptide sequence of SEQ ID NO: 5, of casein-alpha-s2. The sequence, FALPQYLK, is taught in Table II, page 36. Any intended use notwithstanding, the instant peptide, FALPQYLK, comprising residues 174-181 of alpha-s2-casein, is taught by Garault et al, 2002. Claim 6 is further anticipated by Garault et al., 2002 (J. Biol. Chem. 277(1): 32-39), in which they teach the peptide sequence of SEQ ID NO: 8, of casein-alpha-s2. The sequence, ALNEINQFYQK, is taught in Table II, page 36. Any intended use notwithstanding, the instant peptides, ALNEINQFYQK and ALNEINQFY, SEQ ID NO: 9, from alpha-s2-casein, are taught by Garault et al, 2002.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claim 1 provides for the use of the peptide of SEQ ID NO: 5 to make a medicament, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claim 3-6 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for making a food product, does not reasonably provide enablement for using the product to prevent hypertension. The specification

does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The claim recites the term prevent in reference to its intended use as a palliative for hypertension

The first paragraph of 35 U.S.C. 112 states: The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same... . The courts have interpreted this to mean that the specification must enable one skilled in the art to make and use the invention without undue experimentation. The courts have further interpreted undue experimentation as requiring ingenuity beyond that to be expected of one of ordinary skill in the art (Fields v. Conover, 170 USPQ 276 (CCPA 1971)) or requiring an extended period of experimentation in the absence of sufficient direction or guidance (In re Colianni, 195 USPQ 150 (CCPA 1977)). Additionally, the courts have determined that ... where a statement is, on its face, contrary to generally accepted scientific principles, a rejection for failure to teach how to make and/or use is proper (In re Marzocchi, 169 USPQ 367 (CCPA 1971). Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 U.S.C. 112, first paragraph, have been described in In re Colianni, 195 USPQ 150, 153 (CCPA 1977) and have been clarified by the Board of Patent Appeals and Interferences in Ex parte Forman, 230 USPQ 546 (BPAI 1986). Among the factors are the nature of the invention, the state of the prior art, the predictability or lack thereof in

the art, the amount of direction or guidance present, the presence or absence of working examples, the breadth of the claims, and the quantity of experimentation needed. The instant disclosure fails to meet the enablement requirement for the following reasons:

The nature of the invention: The claimed invention is drawn to a peptide of sequence FALPQYLK, isolated from alpha-s2-casein, which is intended to be used to prevent hypertension in people.

The state of the prior art and the predictability or lack thereof in the art: The art teaches that the root causes of hypertension are many, and in the case of essential or primary hypertension, which is the more common type, are unknown as well (Chobanian A. V., et al. 2003 (*JAMA*, 289(19): 2560-2572). The overall strategy for management hypertension is to lower blood pressure via modifications of behavior, such as diet and exercise, and use of medications to manage one or more of the multifarious contributors to the overall levels of systolic and diastolic blood pressure. The root causes of elevated blood pressure are both genetic, with upwards of 30 genes associated with the phenotypes, and environmental, including physical factors such as diet and exercise as well as psychological and emotional factors. There are numerous medicaments currently used from at least fourteen different classes of drugs, each class directed towards one target or mode of action with from two to ten different active ingredients per drug class (Table 4, pages 2565-2566). The art also teaches that given the multi-factorial nature of the etiology of hypertension there are currently (2003) fixed-dose combination medicaments of six types, which are either binary or ternary in

formulation. In all cases the active ingredient has little or no lingering effect once cleared from the body, necessitating either constant medicating or use of the medicament as-needed, indicating there is no preventive effect engendered. Included in the categories of both single-component and combination-type medicaments are several species of angiotensin converting enzyme inhibitors (ACE inhibitors). Moore et al., 2001 (*Amer. J. Medic. Sci.* 322(1): 1-6, present the state of the field of gene therapy for hypertension. They emphasize that hypertension is a complex multifactorial disease and that gene therapy was the only approach that showed promise of long-term cure or prevention. Broadly speaking, "the pharmacotherapeutic strategies have been widely used to treat hypertension.... because of the short duration of action, the therapy could be withdrawn quickly in case of adverse side effects. Although this strategy is quite successful in the limitation, management, and treatment of hypertension, it holds little or no promise for long-term control of this disease."

The amount of direction or guidance present and the presence or absence of working examples: Given the teachings of unpredictability regarding the efficacy or appropriateness of angiotensin converting enzyme inhibitors in a given patient and the lack of any consistent long-term effect of medicaments beyond their clearance from the patients' systems, one would need considerable guidance as to how to assess and select patients who would be both amenable and tolerant of a given bioactive material. The instant application provides little in the way of instruction as to how to determine the suitability of this composition for the stated purpose of preventing a broadly rooted and complex condition, hypertension. The instant application provides results of in vitro

assays of isolated peptides as they inhibit isolated enzymes, but provide no whole-organism results, either animal models or humans.

The breadth of the claims and the quantity of experimentation needed: Given the teachings of unpredictability found in the art regarding the efficacy and suitability of angiotensin converting enzyme inhibitors for preventing hypertension and in the absence of sufficient disclosure in applicant's specification to overcome the teachings of unpredictability which are found in the art, it would require undue experimentation by one of skill in the art to be able to make and use the invention commensurate in scope with the claims.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131

USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 3 recites the broad recitation "of the order of", and the claim also recites "or less than 60 μm" which is the narrower statement of the range/limitation. Claims 3-6 are rejected.

Conclusion

13. No claims are allowable.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hugh P. Young whose telephone number is (571)-272-4988. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hugh P. Young Ph.D.

GAU 1654

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JON WEBER
SUPERVISORY PATENT EXAMINER